MEMORANDUM **CH2MHILL**

Response to EPA Comments on *Sampling and Analysis Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study*

TO: Christopher Lichens, David Taylor/USEPA Region IX

FROM: Tom Perina/CH2M HILL, San Bernardino

DATE: June 8, 2004

This memorandum prepared by CH2M HILL presents the response to interim comments made by David Taylor of the U.S. Environmental Protection Agency (EPA) on the revised *Sampling and Analysis Plan (SAP) for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study*, dated April 2004. The comments dated 13 May 2004 are attached. The comments were originally made on the Draft SAP; comments that were not satisfactorily addressed in the revised SAP are discussed below. The current revision of the SAP includes changes that have been made to fully address these outstanding comments; the SAP text is also attached with changes in redline-strikeout.

EPA Comment 1C

The FSP indicates that samples will be collected using a bailer, although Sections 5.3.1 and 5.3.2 both describe low flow sampling for existing wells. A rationale should be provided for the use of the bailer. It would appear that the samples are likely to include sediment. Will these samples be filtered? If not, will the laboratory be instructed to filter the samples or to analyze them with sediment present? This aspect of the analysis should be discussed.

This comment has not been addressed.

CH2M HILL Response

Section 5.1.2.2 has been revised to state that:

Only the discrete groundwater samples will be collected using a bailer. It is not practical and it would be costly to build temporary wells to collect these screening samples using low-flow sampling techniques. The samples will not be filtered in the field to avoid the loss of volatile organic compounds (VOCs). The mobile laboratory analyzing the samples may or may not filter them; analysis of unfiltered samples will be acceptable.

The text of Section 5.3 was revised.

Please note that the discrete groundwater sampling along with the well installation will likely be performed by a group of potentially responsible parties, not by CH2M HILL.

EPA Comment 1D

Will the data generated for the discrete depth analyses need to be definitive data? In other words, will a full data package, such as would be generated for Contract Laboratory Program (CLP) analyses be required? Section B5.2 of the QAPP (Laboratory Procedures) suggests that all analyses will require a full data package. This would imply that IDW and discrete groundwater samples would require this level of documentation.

This comment has not been addressed. It is not clear what requirements are for data generated in the field.

CH2M HILL Response

A full data package (CLP type) and validation will not be required for the discrete groundwater samples. These samples are considered screening samples and will be used for selecting well screen depth intervals; the CLP-type package and validation are not considered necessary. Furthermore, the decision will have to be made shortly after the analytical results become available to avoid stand-by time of the drill rig. The data cannot be validated in such a short time frame. The EPA mobile laboratory currently does not provide a CLP-type data package.

A full data package (CLP type) and validation will not be required for IDW samples.

The text of the QAPP, Sections D.1 and B.5.2, was modified.

EPA Comment 6

[FSP; Section 5.5.1, Groundwater] it is not immediately clear to the reviewer why a 1 liter sample is needed for the ammonia and total phosphorous samples, nor for the nitrate/nitrite samples. A sample half that size, if not smaller, should be sufficient, even allowing for laboratory QC analyses.

No change was made as a result of this comment. At a minimum it is recommended that polyethylene, rather than amber glass bottles be used, and the comment about sample volume still applies.

CH2M HILL Response

The sample containers used for ammonia and total phosphorous, and nitrate/nitrite samples will be 0.5-liter polypropylene bottles.

Section 5.5.1 was modified accordingly.

EPA Comment 8

[FSP; Section 5.9, Quality Control Samples] Equipment Blanks are not discussed in this section. Also, Region 9 places a very low priority on trip blanks, as it is felt that the information derived from these samples is very limited.

Equipment blanks are not discussed, although it appears that the use of dedicated or disposable equipment would make the issue moot. Trip blanks are still discussed in Section

5.9.4, but are not included in Tables 4-1 and 4-2. This creates confusion, but addresses the comment.

CH2M HILL Response

Equipment blank samples actually will be collected. One equipment blank per sampling event will be collected from a submersible pump used to sample OU-1 wells. These wells have dedicated pump tubing, but not dedicated pumps. The pump will be decontaminated using the procedures outlined in Section 5.6 and a rinsate sample will be collected and analyzed for VOCs. Discussion of equipment blanks was added to Section 5.9.

Trip blanks will not be collected; this change is reflected in the text of Section 5.9.

EPA Comment 11

[QAPP; Section D, Data Validation and Usability] Depending on where the samples are analyzed and the availability of funding, the Region 9 QA Office may or may not be able to provide validation. Assuming that such services can be provided, data are validated using a Tiered approach. All data generated by the Region 9 Laboratory undergoes a Tier 1A validation. Data procured through the RSCC (R9Lab data and CLP CADRE e-deliverables) routinely undergo flagging and are Tier 1 as provided. Data from outside EPA's analytical system (EMAX and outside contract labs) may come with qualified spreadsheets; depending on what the data users request when they procure the services. If users want a manual Tier 1 review with flags from the QA Office, they should request Tier 1A with flags, and arrange for a lab spreadsheet e-deliverable (EDD) to be provided. If a full validation is required a determination should be made whether all data should be validated or part of the data. For example, if well VOC data are to be validated, buy other data are not. When some of the data are selected (based on analysis, site, or analytes), this qualifies as a Tier 2 validation. A traditional full validation constitutes a Tier 3 validation. The QAPP should discuss validation in these terms and indicate who will perform the validation. For data generated by the Region 9 laboratory, it may be difficult to procure validation services (the validators and analysts work for the same company, thus there is a conflict of interest). Other data can be done by the EPA's Environmental Services Assistant Team (ESAT). The discussion of validation should be indicate what data should be validated in what way (Tier).

Section D.1 has been revised, but the revision does not make sense in the context of QAO policies. The discussion of Tier 3, full validation using the traditional Functional Guidelines approach, is reasonably clear. The discussion of Tier 1 and Tier 2, unfortunately, is not. Tier 1 is a "forms" review, with CLP type data being reviewed using the CADRE program if the data are in suitable electronic format. All data receive this level of review. The CADRE review results in the flagging of data. All data from the regional laboratory would also be flagged during the laboratory's internal review process. A Tier 2 review requires that a subset of the data be designated a full validation (i.e., the same as a Tier 3 review). The difference is that not all data would be reviewed fully; only selected analyses, locations/samples, or analytes would receive this review. For a Tier 2 review, the QAPP must designate what data will receive this review. Depending on what is chosen, it may make more sense to proceed with a Tier 3 review in that the work differential between, for example, reviewing ninety percent of the groundwater samples versus one hundred percent

would not be significant difference in terms of the amount of work required, and this is not how Tier 2 is typically established. Percent validation reflects more on the concept of partial validation than tiered validation..

The discussion in this section suggests that the concept of Tier 1 and Tier 2 have been reversed, but it is also not clear what analytes/samples/analytes Tier 2 validation should apply. The discussion of validation should be revised to more accurately reflect what is required.

CH2M HILL Response

The QAPP specifies Tier 2 rather than Tier 1 since Tier 1 review covers only a subset of the QC data (it is limited to the holding time, blanks, and accuracy and precision data). The intent in specifying Tier 2 rather than Tier 3 is to economize by limiting the review to only the summary QC data for all QC (to include calibration, internal standard, tuning summary data beyond the accuracy, and precision data) without checking raw data as is done in Tier 3. Tier 2 is the only tier where we are able to achieve this, since Tier 1 is limited to a subset of the QC data and Tier 3 includes raw data checks.